

In the Claims:

Please cancel claim 20, amend claims 1-6 and 14, 16, 17-19, 21, 23, and 28 and add claims 29-30, as follows. All pending claims, whether or not amended, are presented below for the Examiner's convenience and will replace all prior versions, and listings, of claims in the application:

- Sub
E1
1. (Currently amended) An isolated composition comprising:
 - a) a first single stranded nucleic acid;
 - b) a second single stranded nucleic acid, wherein said first and second nucleic acids are complementary to each other; and
 - c) at least one recombinant Rad52 protein from a higher eukaryote.
 2. (Currently amended) A composition according to claim 1, 29, or 30 wherein said first and second nucleic acids are perfectly complementary to each other.
 3. (Currently amended) A composition according to claim 1, 2, 5 or 23 29 or 30 wherein said Rad52 protein is labeled.
 4. (Currently amended) A composition according to claim 1, 29, or 30 wherein said Rad52 is a human Rad 52 protein.
 5. (Currently amended) A composition according to claim 1, 29, or 30 wherein said first and second nucleic acids are minimally complementary to each other.
 6. (Currently amended) A composition according to claim 1, 29, or 30 wherein at least one of said first and second nucleic acids are labeled.
 14. (Currently amended) A method of screening for a bioactive agent involved in nucleic acid binding comprising:
 - a) contacting:
 - i) a candidate bioactive agent;
 - ii) a first single stranded nucleic acid; and
 - iii) isolated Rad52 protein from a higher eukaryote; and
 - b) screening for determining said binding of said candidate agent and said Rad52 to said first nucleic acid.
 16. (Currently amended) A method of screening for a bioactive agent involved in nucleic acid binding comprising:
 - a) adding:
 - i) a candidate bioactive agent;
 - ii) a first single stranded nucleic acid; and
 - iii) isolated Rad52 protein from a higher eukaryote to form a mixture; and
- Sub
E1
- Sub
E1

- b) screening said mixture for altered biological ~~nucleic acid binding~~ activity, when compared to the ~~nucleic acid binding~~ biological activity of said composition in the absence of said candidate agent.
17. (Currently amended) The method according to claim 14, 16, 18, or 19, ~~or 20~~ wherein said first nucleic acid and said isolated Rad52 are complexed prior to the addition of said candidate agent.
18. (Currently amended) A method of screening for a bioactive agent involved in nucleic acid annealing comprising:
a) adding:
i) a candidate bioactive agent;
ii) a first single stranded nucleic acid; and
iii) isolated Rad52 protein from a higher eukaryote to form a mixture; and
b) screening said mixture for altered ~~nucleic acid annealing~~ biological activity, when compared to the ~~nucleic acid annealing~~ biological activity of said composition in the absence of said candidate agent.
19. (Currently amended) A method of screening for a bioactive agent involved in strand exchange comprising:
a) adding:
i) a candidate bioactive agent;
ii) a first single stranded nucleic acid; and
iii) isolated Rad52 protein from a higher eukaryote to form a mixture; and
b) screening said mixture for altered ~~strand exchange~~ biological activity, when compared to the ~~strand exchange~~ biological activity of said composition in the absence of said candidate agent.
20. (Cancelled) A method of screening for a bioactive agent involved in homology scanning comprising:
a) adding:
i) a candidate bioactive agent;
ii) a first single stranded nucleic acid; and
iii) isolated Rad52 protein from a higher eukaryote to form a mixture; and
b) screening said mixture for altered homology scanning activity, when compared to the homology scanning activity of said composition in the absence of said candidate agent.
21. (Currently amended) The method according to claim 14, 16, 18, or 19, ~~or 20~~ wherein said Rad52 protein is mammalian Rad52 protein.
22. (Previously amended) The method according to claim 21 wherein said Rad52 protein is human Rad52 protein.
23. (Currently amended) A composition according to claim 1, 29, or 30 wherein said first and second nucleic acids are substantially complementary to each other.
24. (Previously amended) A composition according to claim 1 further comprising Rad51.

25. (Previously amended) A composition according to claim 1 further comprising RPA.
26. (Previously amended) A composition according to claim 1 wherein said Rad52 protein is at least 90% homologous to about amino acid 36 to about amino acid 185 of human Rad52 protein.
28. (Currently amended) The method according to claim 14, 16, 18, or 19, ~~or 20~~ wherein said Rad52 protein is labeled.
29. (New) A composition comprising:
a) a first single stranded nucleic acid;
b) a second single stranded nucleic acid, wherein said first and second nucleic acids are complementary to each other;
c) at least one recombinant Rad52 protein from a higher eukaryote; and
d) further comprising at least one Rad51 protein from a higher eukaryote.
30. (New) A composition comprising:
a) a first single stranded nucleic acid;
b) a second single stranded nucleic acid, wherein said first and second nucleic acids are complementary to each other;
c) at least one recombinant Rad52 protein from a higher eukaryote; and
d) further comprising RPA.

Sub
E1